



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/927,089	08/09/2001	Sinichi Ishibashi	M1971-98	4097
7278	7590	11/23/2004		
DARBY & DARBY P.C. P. O. BOX 5257 NEW YORK, NY 10150-5257				
			EXAMINER CULBERT, ROBERTS P	
			ART UNIT 1763	PAPER NUMBER

DATE MAILED: 11/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/927,089

Applicant(s)

ISHIBASHI ET AL.

Examiner

Roberts Culbert

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 14-16 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-16 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/7/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 10/7/04 has been considered.

Allowable Subject Matter

The indicated allowability of claims 14-16 and 18 is withdrawn in view of the newly submitted reference JP-08-315356 A to Hita. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 14-16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,635,037 to Chu in view of JP-08-315356 A to Honda et al.

Referring to figure 3, Chu teaches a method for forming a thin-film magnetic recording medium comprising the steps of forming a laminate (14 and 15) for magnetic data recording on a nonmagnetic substrate (12 and 13); said step of forming being a dry processes in a vacuum atmosphere; forming a protective layer (20) on said laminate; said step of forming a protective layer being a dry process in a vacuum atmosphere', plasma-etching a first surface of said protective layer (Col. 7, Lines 1-8); said step of plasma-etching conducted in a vacuum; conducting the steps of forming a laminate, forming a protective layer, and plasma-etching continuously (Col. 7, Lines 26-33); and forming a lubricant layer (17) on said first surface of said protective layer, whereby surface defects are minimized and surface quality is greatly improved.

Although Chu teaches that by proper choice of the types of gases and the proportions thereof etching rate may be controlled (Col. 7, lines 2-8) and suggests a mixture of oxygen and argon (an inert gas) as an example, Chu does not teach the use of a process gas mixture comprising an inert gas, an oxygen gas, a nitrogen gas and a gas selected from the group consisting of a chlorine gas and a fluorine gas.

Referring to the full translation provided, Honda et al. teaches a method of forming a thin-film magnetic recording medium including forming a magnetic layer on a non-magnetic substrate, forming a protective layer on the magnetic layer and plasma etching the magnetic layer using a process gas mixture comprising an inert gas, an oxygen gas, a nitrogen gas and a gas selected from the group consisting of a chlorine gas and a fluorine gas. (Paragraphs 10 and 25)

It would have been obvious to one of ordinary skill in the art at the time of invention to use a process gas including argon, oxygen, and nitrogen and a gas selected from the group consisting of a chlorine gas and a fluorine gas as shown by Honda et al. to etch the protective carbon layer of Chu et al.

One of ordinary skill in the art would have been motivated at the time of invention to use the process gas mixture suggested by Honda to etch the protective layer of Chu because Honda teaches that

Art Unit: 1763

similar effectiveness is achieved for etching a carbon protective layer using the various gasses mixed with oxygen.

Regarding claims 14 and 15, Chu teaches reactive ion etching or sputtering in the same vacuum apparatus to deposit the laminate and the protective layer (Col. 7, lines 26-33).

Regarding claim 18, as applied above, Chu in view of Honda teaches the method of the invention substantially as claimed, but does not teach the ratio of the etch gasses such as a mixture of Ar O₂, and N₂ with a ratio of 6:1:3. However, it would have been obvious at the time of invention to optimize the ratio of known etch gasses in order to control the etch rate and material selectivity as taught by Chu (Col. 7, lines 2-8).

Further, claim 18 differs from Chu in view of Honda only by specifying various concentrations of the etch gasses. A person having ordinary skill in the art at the time of the claimed invention would have found it obvious to modify the ratio of reactant species by using different processing parameters because same were known to be cause effective variables in the plasma etching art and routine experimentation would have been expected to optimize them. See *In re Boesch*, 205 USPQ 215 (CCPA 1980).

Changes in temperature, concentrations, or other process conditions of an old process, do not impart patentability unless the recited changes are critical, i.e., they produce a new and unexpected result. See MPEP 2144.05.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberts Culbert whose telephone number is (571) 272-1433. The examiner can normally be reached on Monday-Friday (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (571) 272-1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1763

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

R. Culbert



GREGORY MILLS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700